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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/551,295

09/24/2005

Robert Allan Young

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EXAMINER

SIGLER, JAY R

ART UNIT

PAPER NUMBER

3775

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DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/551,295	<b>Applicant(s)</b> YOUNG, ROBERT ALLAN	
	<b>Examiner</b> JAY R. SIGLER	<b>Art Unit</b> 3775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4,6-14,19-23 and 28-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4,6-14,19-23 and 28-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>See Continuation Sheet</u> .                                  | 6) <input type="checkbox"/> Other: _____                          |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :17 September 2008; 18 September 2008.

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 30 September 2008 has been entered.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 44 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claim 44 recites the limitation "the multi-faceted surface" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim. Additionally, claim 44 appears to be drawn to the embodiment of the invention shown in Fig. 2b, which includes annular grooves and no threads. Since all independent claims include language claiming the threads shown in the embodiment of Fig. 2a, claim can not be

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dependent on any independent claim because it would introduce new matter. Thus claim 44 will not be examined further.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3, 6-8, 10-13, 19-22, 28-30, 32, 34-36, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuo (U.S. Patent 6,406,478) in view of Trebing et al. (U.S. Patent 5,601,553; previously cited).

a. Concerning claim 1, Kuo teaches a **bone plate** (see Fig. 1) **with a longitudinal axis, a bone-contacting bottom side and a top side with at least one complex aperture (22) each complex aperture comprised of at least one set of two overlapping holes having an offset of a given distance between centers thereof** (col. 2, l. 36-38), **such offset defining a necked down portion** (see Fig. 1) **between the overlapping holes, each such set of overlapping holes communicating through the plate from the top to the bottom side**. Kuo does not specifically teach that the holes are threaded.

However, Trebing et al. teaches a bone plate with holes 11-15 that are threaded in order to allow the use of locking screws (see Abstract) which provide a better engagement between bone plate and bone screw. It would have been obvious to

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someone of ordinary skill in the art at the time of the invention to thread the overlapping holes in the invention of Kuo, in view of Weaver et al., in order to allow the use of locking screws (see Abstract) and consequently provide a better engagement between bone plate and bone screw.

Concerning claim 6, the bone plate of Kuo includes multiple holes as seen in Figure 1. Concerning claim 10 and 11, the holes can be considered aligned on an axis or in a staggered arrangement from the longitudinal axis. Concerning claims 19 and 20, the modified holes would have been adapted to receive a bone screw with head and bone-engaging thread and the head of the bone screw has a plate engaging thread. Concerning claim 43, a threaded surface can be considered multi-faceted.

Concerning claims 28, the overlapping holes of Kuo are comprised of three overlapping holes.

Concerning claims 2, 3, 7, 8, 12, 13, 21, 22, 29, and 30, Kuo teaches the holes formed normal to the top of the plate (see Fig. 3). Figures 12, 15 and 16 of Weaver et al. show the holes being formed at angles normal to the top side of the plate or at an angle offset from normal to the top side of the plate in order to allow the bone screws to enter the bone at different angles. It would have been obvious to someone of ordinary skill in the art at the time of the invention to have the modified holes of Kuo at angles, in view of Weaver et al., in order to allow the bone screws to enter the bone at different angles.

Concerning claim 32, Kuo, in view of Weaver et al., fairly suggests the bone plate and bone screw as shown above.

Concerning claims 34 - 36, Kuo, in view of Weaver et al., fairly suggests the limitations as shown above.

7. Claims 4, 9, 14, 23, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuo (U.S. Patent 6,406,478) in view of Trebing et al. (U.S. Patent 5,601,553), and further in view of Orbay (U.S. Patent 6,358,250). Kuo, in view of Trebing et al., fairly suggests the invention as claimed but does not fairly suggest wherein at least one of the overlapping holes is formed normal to the top side of the plate and at least a second of the overlapping holes is formed at an angle offset from normal to the top side of the plate. Orbay teaches a bone plate with holes that define axes which are oblique relative to each other (Column 3, Lines 52-58; Figure 6, Axes A<sub>1</sub>-A<sub>4</sub>) to secure the bone fragments in their proper orientation (Column 4, Lines 48-53). It would have been obvious to someone of ordinary skill in the art at the time of the invention to use the holes with axes which are oblique of Orbay in the invention of Kuo, in view of Trebing et al., in order to secure the bone fragments in their proper orientation.

8. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuo (U.S. Patent 6,406,478) in view of Trebing et al. (U.S. Patent 5,601,553), and further in view of Cesarone (U.S. Patent 5,851,207). Kuo, in view of Trebing et al., fairly suggests the invention as claimed but does not fairly suggest including a drill guide that is securely engageable to the bone plate. Cesarone teaches a bone plate and drill guide

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that are securable to one another (Column 3, Lines 48-49) because the locking mechanism demands extremely precise screw alignment and, thus, accurate drill guides are critical to successful operations (Column 1, Lines 59-67). It would have been obvious to someone of ordinary skill in the art at the time of the invention to include a securable drill guide in the modified invention of Kuo, in view of Trebing et al. and Cesarone, because the locking mechanism demands extremely precise screw alignment and, thus, accurate drill guides are critical to successful operations.

9. Claims 37-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuo (U.S. Patent 6,406,478) in view of Trebing et al. (U.S. Patent 5,601,553) and Tepic et al. (U.S. Patent 5,733,287).

Concerning claim 37, Kuo, in view of Trebing et al., fairly suggests the claimed invention as applied to claim 1 above, but does not fairly suggest wherein the bottom side includes recesses located between adjacent threaded apertures and which are substantially located exclusively on the bottom side, the recesses being sized so as to define a cross-section transverse to the longitudinal axis and across the recesses that ensures that a yield strength in bending across the recesses is less than across a threaded aperture. Tepic et al. teaches a bone plate with recesses 13 that are located on the bottom side to reduce the peak stresses (Column 1, Lines 34-36). It would have been obvious to someone of ordinary skill in the art at the time of the invention to include the recesses of Tepic et al. in the modified invention of Kuo, in view of Trebing et al., in order to reduce the peak stresses.



Concerning claim 38, the recesses of Tepic et al. are substantially rectangular in form (taken to be embodied by the fact that the cross section of the recess would be the same as the cross section 15 which is substantially rectangular, or alternatively embodied by the recesses are taken to be cut out at substantially right angles from the sides and top).

Concerning claim 39, the recesses of Tepic et al. are equally spaced along the longitudinal axis (seen in Figure 8).

Concerning claim 40, Tepic teaches that the total area removed from the bottom side due to the recesses is less than 50% of the total surface area of the bottom side (Seen in Figure 2 where there is no transverse recesses, the total area removed is equal to 0%).

Concerning claim 41, the recesses of Tepic et al. are transverse and extend across the width of the bone plate (Column 2, Lines 58-59).

10. Claims 37, 40, and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuo (U.S. Patent 6,406,478) in view of Trebing et al. (U.S. Patent 5,601,553) and Klau et al. (U.S. Patent 5,002,544).

Concerning claim 37, Kuo, in view of Trebing et al., fairly suggests the claimed invention as applied to claim 1 above, but does not fairly suggest wherein the bottom side includes recesses located between adjacent threaded apertures and which are substantially located exclusively on the bottom side, the recesses being sized so as to define a cross-section transverse to the longitudinal axis and across the recesses that ensures that a yield strength in

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bending across the recesses is less than across a threaded aperture. Klau et al. teaches a bone plate with recesses 10 that are located on the bottom side to allow the resistance to bending in these areas to be less than in the area of the holes (Column 1, Lines 49-52). It would have been obvious to someone of ordinary skill in the art at the time of the invention to include the recesses of Klau et al. in the modified invention of Kuo, in view of Trebing et al., in order to allow the resistance to bending in these areas to be less than in the area of the holes.

Concerning claim 42, the recesses of Klau et al. extend from a side of the bone plate transversely toward the longitudinal axis but not across the axis (seen in Figure 9).

### ***Response to Arguments***

11. Applicant's arguments with respect to claims 1-4, 6-14, 19-23, 29-42 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAY R. SIGLER whose telephone number is (571)270-3647. The examiner can normally be reached on Monday through Thursday from 8 AM to 4 PM (EST).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eduardo Robert can be reached on (571) 272-4719. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. R. S./

Examiner, Art Unit 3775

/Eduardo C. Robert/

Supervisory Patent Examiner, Art Unit 3733